PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-075717
(43)Date of publication of application : 15.03.2002

(51)Int.Cl. H01F 1/053
C22C 38/00

(21)Application number : 2001-175316
(22)Date of filing : 11.06.2001

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(30)Priority
Priority number : 2000176595 Priority date : 13.06.2000 Priority country : JP

(54) R-Fe-B RARE EARTH PERMANENT MAGNET MATERIAL

(57)Abstract:
PROBLEM TO BE SOLVED: To provide an R-Fe-B rare earth permanent magnet material, in which abnormal grains are grown less, even if an alloy is decreased in oxygen content by separating out ZrB compound, NbB compound, or HfB compound finely and uniformly in a magnet, so as to markedly expand its range of optimal sintering temperature.
SOLUTION: An RFeB magnet alloy is composed of 87.5 to 97.5 vol.% Fe14R2B1 phase (wherein, R denotes at least a kid of rare earth element) and 0.1 to 3 vol.% rare earth or rare earth and oxide of transition metal. A compound selected out of a ZrB compound composed of Zr and B, an NbB compound composed of Nb and B, or an HfB compound composed of Hf and B as main components is contained in the metallic structure of the above alloy, and the compound grains are smaller than 5 μm in average grain diameter and dispersed in the alloy at a maximum interval of 50 μm or smaller.

LEGAL STATUS

[Date of request for examination] 25.07.2003
[Date of sending the examiner's decision of rejection]
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]
[Date of final disposal for application]
[Patent number]
[Date of registration]
[Number of appeal against examiner's decision of rejection]
[Date of requesting appeal against examiner's decision of rejection]
[Date of extinction of right]